

REMARKS

Claims 1-21 and 28-34 are pending in this application. Claims 1 and 11 are amended and claims 6-7, 11-21 and 29-30 are withdrawn herein. Claim 34 has been added. Claims 22-27 were previously canceled. Applicant respectfully requests reconsideration of the claims in view of the following remarks.

Applicant acknowledges the restriction of claims 11 and 15-21. Previously allowed claim 11 has been rewritten in dependent form and now depends from claim 1. Allowance of claim 1 would therefore lead to allowance of claims 11-21 (as well as dependent claims 6 and 7).

Claims 1-5, 8-10, 28 and 31-33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishiyama (U.S. Patent No. 6,107,685, hereinafter "Nishiyama") in view of Joshi et al. (U.S. Patent No. 6,731,003, hereinafter "Joshi"). Applicant respectfully traverses this rejection.

Claim 1, as originally filed, specifically recites a plurality of functional 3-D structures each of which includes "a compliant base element." Neither Nishiyama nor Joshi teach or suggest a compliant base element. In particular, Nishiyama teaches solder bumps 21, which do not include any compliant base element. Col. 7, line 40. Joshi teaches coated copper bump 30, which includes a plated copper bump 22 but no compliant base element. Col. 3, line 43. Since the references alone do not teach the claimed invention, the combination cannot teach the claimed invention.

Further, claim 1, as amended, also specifically recites "a plurality of reroute traces extending over the surface of the wafer, each reroute trace being electrically connected to one of the bond pads and extending onto the upper surface of one of the functional 3-D structures so

that the reroute trace provides an electrical connection between the bond pad and the upper surface of the functional 3-D structure."

The Office Action states that Nishiyama does not disclose a plurality of reroute traces but points to Joshi, which allegedly includes reroute traces 24 and 26. First, Applicant respectfully submits that adhesion layer 24 and oxidation resistant layer 26 are not reroute traces. So that there can be no confusion, however, Applicant has amended the claim to specifically require that each reroute trace provides an electrical connection between the bond pad and the surface of the functional 3-D structure. Clearly adhesion layer 24 and oxidation resistant layer 26 do not provide an electrical connection between conductive region 32 and plated copper bump 22.

Therefore, it is respectfully submitted that claim 1 is allowable over the references of record.

Claims 2-21 depend from claim 1 and add further limitations. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well as for adding new limitations. Since claim 1 is clearly generic with respect to its dependent claims, Applicant respectfully requests allowance of the withdrawn claims.

Claim 28, as previously presented, specifically recites "a plurality of functional 3-D structures disposed on the wafer, each functional 3-D structure including a compliant base element and having a first height." As discussed above, neither Nishiyama nor Joshi teach or suggest a compliant base element. Neither Nishiyama's solder bumps 21 nor Joshi's plated copper bump 30 includes a compliant base element. Since the references alone do not teach the claimed invention, the combination cannot teach the claimed invention.

Further, claim 28 specifically recites that "each of the other 3-D structures [has] a second height that is greater than the first height." To show this limitation, the Office Action points to

Figures 2A-2B of the Nishiyama reference. This conclusion, however, directly contradicts the reference itself. In describing the Figures 2A and 2B, Nishiyama very explicitly states that "it is *extremely important* to make the heights of the bumps equal to each other." Col. 7, line 64 (emphasis added). *See also* col. 6, line 51 ("it is essential that the heights formed on the land terminals are equal to each other"). With respect to Figures 3A to 3D, Nishiyama goes on to "show steps of forming land terminals with bumps in such a manner that the *heights of bumps are equal to each other*." Col. 7, line 66 (emphasis added).

Applicant notes that Figure 2B appears to show that some bumps that have a greater height than other bumps. The MPEP makes clear, however, that proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale. MPEP § 2125. The drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. *Id.* When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. *Id.* In this case, the reference is not silent as to dimensions. Quite to the contrary, it very explicitly states that it is extremely important to make the heights of the bumps equal to each other.


Applicant respectfully submits that a reference that explicitly states that it is extremely important and essential to make the heights of bumps equal to each other does not teach or suggest "structures having a second height that is greater than the first height." Therefore, claim 28 is allowable over the references of record.

In view of the above, Applicant respectfully submits that the application is in condition for allowance and request that the Examiner pass the case to issuance. If the Examiner should have any questions, Applicant requests that the Examiner please contact Applicant's attorney at

the address below. In the event that the enclosed fees are insufficient, please charge any additional fees required to keep this application pending, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,

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Date


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